near the Army Medical Museum was unveiled with appropriate ceremonies, and at 8:15 p. m. the President of the Congress, Prof. Dr. Wm. H. Welch, of Johns Hopkins University, Baltimore, delivered the Presidential address, which has been published in SCIENCE.

On May 6th the Executive Committee, through the Secretary, reported a recommendation that the next meeting of the Association should be held at Cornell University in December, 1897, in conjunction with the Society of American Naturalists and other affiliated societies. On motion the Association adopted the report.

The President called attention to the fact, that inasmuch as the Congress met every three years, the election for delegate to its Executive Committee every two years seemed to cause some confusion. After some discussion Dr. Hewson moved that hereafter the election for delegate occur every *three* years, and this was adopted. Dr. Wilder, from the Committee on Anatomical Nomenclature, reported progress. Report accepted. Dr. Gerrish, from the Committee auditing the Treasurer's account, reported the accounts correct.

Dr. Huntington made remarks on 'The Cerebral Convolutions of two Brains from Natives of British Guiana.' Illustrated by casts and photographs. Discussed by Drs. Baker and Wilder.

Dr. F. J. Shepherd, of Montreal, showed a specimen of double internal cuneiform bone of right foot of a white woman aged 17; and photographs of hands and feet of same subject, showing multiple digits.

Dr. W. P. Carr, of Washington, showed some anatomical models on a large scale illustrating the circulation of the blood through the heart, the formation of a blood-vessel, and the corona radiata. Discussed by Drs. Wilder, Huntington and Shepherd.

Dr. Blake read a 'Contribution to the Topographical Anatomy of the Mediastinum Superior Theoracic Aperture.' Discussed by Drs. Baker, Wilder and Huntington.

Dr. Addinell Hewson, of Philadelphia, showed the forms of record used in the dissecting rooms of Jefferson College, Philadelphia, Pa., and made remarks thereon. Discussed by Drs. Baker, Huntington, Reisinger and Wilder.

Dr. C. A. Hamann, of Cleveland, showed specimens of congenital malformation of the extremities. Discussed by Drs. Huntington and Geo. T. Kemp.

The Association then adjourned *sine die*.

After the adjournment, at the suggestion of Dr. Kemp, Dr. G. C. Huber, of the University of Michigan, exhibited slides showing the terminal endings of the nerves in the epithelium of the urinary bladder and the sensory nerve endings of the muscle.

D. S. LAMB,
*Secretary.*

## *SYSTEMATIC CLASSIFICATION OF TEXTILE AND OTHER USEFUL FIBERS OF THE WORLD.**

THE advantages of a broader and more systematic classification for textile and other useful fibers has long been appreciated by the author. While engaged in the preparation of a descriptive catalogue of fibers of the world in which over a thousand species of useful fiber plants are enumerated, the necessity for a better classification became apparent, and the scheme herewith presented was devised. The term fiber is popularly understood to relate to those forms of filamentous substance that can be spun and woven, or twisted into cordage, though it should not be employed in so restricted a sense. In fact, many of the true fibers are used in other ways, for there are kinds of cordage, and even cloth substi-

*Abstract of a paper read before the Philosophical Society of Washington, by Chas. Richards Dodge.

tutes, that are neither spun or woven. On the other hand, there are many forms of fibrous substances of the roughest description, such as reeds or shredded palm leaves, that are plaited, this being a coarse form of weaving, so that it becomes difficult to draw the line between a fine spinning fiber like flax, that is woven into linen fabrics, and a sedge, coarsely woven into matting, or a woody twig of Salix plaited into a basket.

In the classification proposed two groups are recognized, based on cell structure. The first, fibers with fibro-vascular structure, embraces three sub-groups, and the second, fibers with simple cellular structure, embraces two sub-groups. The classification is as follows:

A. FIBRO-VASCULAR STRUCTURE.

1. Bast Fibers:

Derived from the inner fibrous bark of dicotyledonous plants or exogens, or outside growers. They are composed of bast cells, the ends of which overlap each other so as to form, in mass, a filament. They occupy the phlöem portion of the fibro-vascular bundles, and their utility in nature is to give strength and flexibility to the tissue.

2. Woody Fibers:

a. The stems and twigs of exogenous plants, simply stripped of their bark and used entire, or separated into withes, for weaving or plaiting into basketry.

b. The entire, or subdivided *roots* of exogenous plants, to be employed for the same purpose, or as tye material, or as very coarse thread for stitching or binding.

c. The *wood* of exogenous trees easily divisible into layers or splints for the same purposes, or more finely subdivided into thread-like shavings for packing material.

d. The *wood* of certain soft species of exogenous trees after grinding, and converting by chemical means into wood pulp, which is simple cellulose; and similar woods more carefully prepared for the manufacture of artificial silk.

3. Structural Fibers:

a. Derived from the structural system of the stalks, leaf stems and leaves, or other parts of monocotyledonous plants or inside growers, occurring as isolated fibro-vascular bundles, and surrounded by a pithy, spongy, corky, or often a soft, succulent, cellular mass covered with a thick epidermis. They give to the plant rigidity and toughness, thus enabling it to resist injury from the elements; and they also serve as water vessels.

b. The whole stems, or roots, or leaves, or split and shredded leaves of monocotyledonous plants.

c. The fibrous portion of the leaves or fruits of certain exogenous plants when deprived of their epidermis and soft cellular tissue.

B. SIMPLE CELLULAR STRUCTURE.

4. Surface Fibers:

a. The down, or hairs surrounding the seeds, or seed envelopes, of exogenous plants, which are usually contained in a husk, pod or capsule.

b. Hair-like growths, or tomentum, found on the surfaces of the stems and leaves, or on the leaf buds of both divisions of plants.

c. Fibrous material produced in the form of epidermal strips from the leaves of certain endogenous species, as the palms.

5. Pseudo-Fibers, or False Fibrous Material:

a. Certain of the mosses, as the species of *Sphagnum*, for packing material.

b. Certain leaves, the dried substance of which forms a more delicate packing material.

c. Sea weeds wrought into lines or cordage.

d. Fungus growths, or the mycelium

of certain funguses that may be applied to economic uses for which some of the true fibers are employed.

In the portion of the paper which followed, the different forms of fibers were defined in detail and examples given from the list of well-known commercial and native or aboriginal species. It is the consideration of these useful native fibers that makes it possible to enumerate a list of a thousand species of fibrous plants, while the world's commercial fibers would hardly reach a total of fifty species. The native or aboriginal forms are interesting; our museums are filled with manufactures from them, and any scheme of systematic classification which omits them is faulty and imperfect.

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*CURRENT NOTES ON ANTHROPOLOGY.*

PIGMENTATION OF THE SKIN.

M. Breul, in an inaugural thesis reviewed in *L'Anthropologie*, reports some new observations on the pigmentation of the human skin.

The colors of the different races depend upon this pigment in the epidermis, especially in its deeper strata. Breul finds the coloring matter in the interior of the epithelial cells, while even in the negro the intercellular spaces are white. The pigment itself may be quite black, or of any shade up to a light yellow. It may be confined to the nucleolus, or extend over the cell. A close examination shows that it is distributed in patches over the skin, between them the tissue being colorless. This is true even of the black races, although in them the patches are close together and may not be discernible unless the skin be stretched.

This distribution of the coloring matter is the same in all races, and its actual amount is probably the same, the difference in hue resulting from the darker or lighter character of the pigmentary grains.

HOLMES' RESEARCHES IN MEXICO.

The second part of the 'Archæological Studies' of Professor William H. Holmes (for a notice of the first part, see Science, February 21, 1896) is devoted to the 'Monuments of Chiapas, Oaxaca and the the Valley of Mexico.' It is a most attractive monograph, based on original personal studies, and containing nearly forty full-page plates, panoramic views and numerous text illustrations. The ruins described are those of Palenque, Monte Alban (in Oaxaca), Mitla and San Juan Teotihuacan. The volume closes with a series of 'Studies of Ancient Mexican Sculpture,' referring to tablets, yokes, figures and carved shells.

The text is full of new suggestions and comparisons, as well as of facts. The architectural elements of the various sites are analyzed and compared, and the sources from which the materials were obtained were carefully sought out. Nowhere was any evidence found of the use of metals, or a condition of the arts above that known to have existed at the discovery, although the stately monuments of Oaxaca and Teotihuacan testify to an astonishing concentration of effort for prolonged periods. The remains in Mexico are more magnificent in dimensions, but on the whole less artistic than those of Yucatan or Chiapas.

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*NOTES ON INORGANIC CHEMISTRY.*

In the last *Comptes Rendus* a new atomic weight determination of cerium is described by Wyrouboff and Verneuil. The element was obtained in a state of great purity, and the determinations made by converting the sulfate into the oxid by heat. The atomic weight is given at 92.7, but this is on the supposition that the oxid obtained is $Ce_3O_4$. It is ordinarily considered that the formula of this oxid is $CeO_2$, which would